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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/474,359	12/29/1999	JEFF C. MORRIS	INTL-0294-US	2154

7590 08/28/2002

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EXAMINER

KIM, KEVIN

ART UNIT	PAPER NUMBER
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2634

DATE MAILED: 08/28/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/474,359

Applicant(s)

MORRISS, JEFF C.

Examiner

Kevin Y Kim

Art Unit

2634

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 29 May 2002.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 7-9, 12-15 and 18-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 20-27 is/are allowed.
- 6) ☒ Claim(s) 7-9, 12-15, 18 and 19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments filed on May 29, 2002 have been fully considered but they are not persuasive.

Applicant contends that there is no suggestion or motivation to combine the cited prior art references. As pointed out in the first Office action, Tamura et al teaches delaying a clock/ "strobe" signal by comparing the data signal and the clock signal but is silent on the specifics of the output signal from the phase comparator. Specifically, there is no teaching how the output of the phase comparator is used to control the variable delay circuits. Thus, one skilled in the art would naturally would have been motivated to look for teachings in other references as to how to use the comparator to control the variable delay circuits. One of those prior art is the Dara patent that teaches a phase detector generating a pulse waveform/ "pulse train" having a duty cycle proportional to the phase difference between input signals to the phase comparator. The pulse waveform is ultimately used to synchronize the phases of the two input signals. Therefore, it is considered that the Dara patent would have been relied on by one skilled in the art as a way of completing the data receiver disclosed by Tamura. However, in light that this reasoning behind the rejection was somewhat not explained sufficiently in the last office action, applicant deserves a new non-final Office action more expressly laying out the ground of rejection (substantially repeating the examiner's position above) as follows.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 19 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. According to claim 13, the base claim from which claim 19 depends, "at least one pulse train signal" is generated by "using a data bit signal and a first strobe signal." Now claim 19 recites generating the same "at least one pulse train signal" by "causing the data bit signal." Despite an amendment, it can not be ascertained whether a combination of the data bit signal and first strobe signal or just the data bit signal functions to generate the pulse train signal.

***Claim Rejections - 35 USC § 103***

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
5. Claims 7-9, 13-15, 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tamura et al in view of Dara.

Consider claims 7,8,13,15 and 18. Referring to Figs. 11 and 14, Tamura et al discloses a data receiver comprising data buffers (541 –543), "a first circuit" (5301) generating a skew-indicating signal between data and strobe and "a second circuit" (5302,5304) for latching data into the buffers. Regarding claim 9 reciting a delay chain and multiplexing circuitry, see the delay chains (5302, 5304) and col.19, ll.16-20. Regarding claim 19, data in the latches are known to be selected as needed by using a multiplexer or equivalents thereof. And yet Tamura et al is silent on the characteristics of the control signal indicating the skew between the data and clock signals. In other words, the patent failed to expressly teach exactly how the output of the comparator

controls the delay of the clock signal. Therefore, one of ordinary skill in the art would have been motivated to look outside the Tamura patent regarding the actual implementation of a relationship between the phase comparator and the delay chains. In that respect, Dara teach a phase comparator producing a pulse train whose duty cycle indicating the phase difference between two input signals for phase synchronization between the two signals. See col.12, ll.21-27. Thus it would have been obvious to one skilled in the art at the time the claimed invention was made to use a comparator that generates an output signal with duty cycle dependent on the phase difference between two input signals, as taught by Dara, as the comparator of Tamura et al's receiver as a way of actually building the receiver apparatus. Regarding claims 14 the use of an up/down counter, that stores "a calibration value" indicative of phase difference between two signals in a phase comparator is well known in the art and would have been an obvious alternative.

***Allowable Subject Matter***

6. Claims 20-27 are allowed.

***Conclusion***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Schreurs et al (US 5,465,277) teaches a phase comparator that indicates the phase difference with the duty cycle. Col.2. ll.39-48.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Y Kim whose telephone number is 703-305-4082. The examiner can normally be reached on 8AM --5PM M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on 703-305-4714. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

kvk  
August 23, 2002

  
**STEPHEN CHIN**  
**SUPERVISORY PATENT EXAMINER**  
**TECHNOLOGY CENTER 2600**